# The 2011 SIOP Graduate Program Benchmarking Survey Part 7: Theses, Dissertations, and Performance Expectations

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Editor's Note: In the interest of space, the authors agreed to have many of their tables hosted on SIOP's website rather than reproduced in the article. I thank them for their flexibility. Readers who want to download all of the tables in a single convenient file can find a link at the end of the article.

In this, the penultimate installment of the report on the 2011 survey of I-O psychology graduate programs, norms are provided on master's theses, doctoral dissertations, and other student performance expectations. Theses and dissertations are classic benchmarks of scholarly success, reflecting years of learning in substantive, methodological, and other domains (e.g., technical writing, departmental politics). Marking independence from mentors, they are rites of passage in the maturing of intellectual, professional, and (often) scientific competence. Beyond such generalities, standards regarding what counts as a full and proper thesis/dissertation and the procedures guiding its execution are of mostly unknown quality, magnitude, and consistency across degrees, departments, and institutions. This section of the survey afforded a high-resolution

snapshot of theses, dissertations, and other performance expectations in I-O/ OB graduate programs in terms of over 100 distinct features.

As in the previous installments, we present overall norms as well as those broken out by degree type (master's, doctoral) and department type (psychology, business/management). Non-US data are excluded due to guestionable representativeness, and the 2 x 2 breakouts further exclude other departments and online-only programs. We also describe distinctive features of Gibby, Reeve, Grauer, Mohr, and Zickar's (2002) most productive doctoral programs and Kraiger and Abalos's (2004) top master's and doctoral programs, based on student ratings, relative to peer programs (e.g., other psychology-based doctoral programs for both Gibby et al. and Kraiger and Abalos doctoral). Norms for nominal and continuous variables are presented separately and statistical results are provided for the 2 x 2 breakouts as cell sizes permit.

We start with basic thesis/dissertation features (e.g., page length), then consider expectations regarding content (e.g., stated aim to test or develop theory) and methods (e.g., power analysis before data collection), committees (e.g., eligible members), proposals (e.g., description of expected results), final defenses (e.g., duration), success rates, and participation in other developmental opportunities (e.g., conference attendance). We finish by identifying possibly distinctive features of the three top-10 sets relative to peer programs.

### **Basic Thesis/Dissertation Features**

Table 1 shows frequencies and percentages of programs offering theses/ dissertations based on the entire (U.S.) sample and for the 2 x 2 breakout samples. Corresponding chi-square results are reported in Table 2. Main effects are evident for both department and degree types: all doctoral programs require a dissertation; theses are required at much lower rates (40% in psychology; 0% in business/management). With few exceptions (all but 3%), thesis/ dissertation work is counted toward program credit requirements, although business/management doctoral programs may be slightly less likely to do

this than psychology doctoral programs (82% vs. 97%; p < .10, two-tailed).

Norms for basic continuous variables are offered in Table 3 for all programs and in Tables 4 and 5 for the 2 x 2 breakouts. As with other sections of the survey, too few master's programs in business/ management departments offered data to permit factorial ANOVA. Instead, ttests were used to compare (a) master's and doctoral programs within psychology departments, and (b) psychology and business/management departments within doctoral programs.<sup>1</sup> Most variables show substantial (and significant) differences between degree types (within psychology departments), rendering the overall means in Table 3 of limited normative utility.

Focusing on the 2 x 2 breakouts, we see that dissertations average 98 pages in length and theses average 56. Not surprisingly, key milestones in completing a thesis are reached sooner and in quicker succession than those of a dissertation (in psychology). The proposal and final defense are separated by about 6 months for theses and by a full year for

#### Table 1

Basic Thesis/Dissertation Features (Nominal Variables)

	All p	orograr	ns <sup>a</sup>	Psycho	ogy m	aster's <sup>b</sup>	Psycho	logy do	octoral <sup>b</sup>	Busine	ss mas	ter's <sup>b</sup>	Busin	ess do	ctoral <sup>b</sup>
Item/Variable	N resp.	Freq	%	N resp.	Freq	%	N resp.	Freq	%	N resp.	Freq	%	N resp.	Freq	%
Availability of written thesis/dissertation															
Required	123	78	63.4	55	22	40.0	40	40	100.0	5	0	.0	11	11	100.0
Optional	123	31	25.2	55	26	47.3	40	0	.0	5	2	40.0	11	0	.0
Not offered	123	14	11.4	55	7	12.7	40	0	.0	5	3	60.0	11	0	.0
Program credit provided for thesis/diss'n	103	100	97.1	46	46	100.0	39	38	97.4	1	-	-	11	9	81.8

<sup>a</sup>Excluding non-US.

<sup>b</sup>Excluding non-US and online only; significance test results are reported in Table 2.

#### Table 3

Basic Thesis/Dissertation Features: All Programs (Continuous Variables)

Item/Variable	N resp.	Mean	SD	Skew	Median	Min	Max
Expected length of main text (n pp.)							
Average	93	79.82	39.89	1.11 **	75.0	20	220
Minimum	75	51.03	25.17	1.16 **	50.0	12	150
Maximum	70	149.89	102.41	1.91 **	120.0	30	500
Ideal year of milestone completion							
Proposal submission/defense	95	2.62	1.20	.01	3.0	1	5
Data collection	97	2.96	1.20	.06	3.0	1	5
Data analysis	97	3.19	1.28	.17	3.0	1	5
Final submission/defense	97	3.35	1.36	.11	4.0	2	6
Lateness per milestone (weeks)							
Proposal submission/defense	79	3.99	5.46	3.39 **	2.0	0	36
Data collection	79	4.58	7.43	4.21 **	3.0	0	50
Data analysis	79	4.21	5.56	3.15 **	3.0	0	36
Final submission/defense	80	4.94	5.78	2.53 **	3.0	0	36
% of total degree credits for thesis/diss'n research	86	14.61	9.73	2.36 **	13.0	3	70
% completing thesis/diss'n with initial advisor	70	66.54	22.78	40	72.5	10	100
n faculty members required for committee	98	3.46	.90	.60 *	3.0	2	6
n restrictions/expectations (see Table 6)							
Thesis/dissertation content	100	5.17	1.41	.29	5.0	2	9
Thesis/dissertation methods	96	3.91	1.65	.57 *	4.0	1	9
Content + methods	95	9.12	2.53	.68 **	9.0	3	17
Proposal content	96	6.90	1.68	83 **	7.0	1	10

Excluding non-US. #p < .10, \*p < .05, \*\*p < .01, two-tailed

#### Table 4

Basic Thesis/Dissertation Features: Master's and Doctoral Programs in Psychology Dep	partments (Continuous Variables
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	Master's programs							Doctoral programs							
Item/Variable	N resp.	Mean	SD	Skew	Median	Min	Max	N resp.	Mean	SD	Skew	Median	Min	Max	sig."
Expected length of main text (n pp.)															
Average	41	55.68	20.41	.94 *	50.0	20	110	37	97.70	33.76	.51	100.0	40	175	**
Minimum	37	36.00	13.99	1.12 **	30.0	12	80	28	65.54	20.29	.28	60.0	30	100	**
Maximum	33	122.03	104.79	3.04 **	100.0	30	500	27	174.07	78.07	.52	160.0	50	350	*
Ideal year of milestone completion															
Proposal submission/defense	42	1.51	.49	01	1.5	1	2	37	3.70	.69	-1.59 **	4.0	1	5	**
Data collection	43	1.84	.34	-1.78 **	2.0	1	2	37	4.11	.50	-1.51 **	4.0	2	5	**
Data analysis	43	1.94	.20	-1.65 **	2.0	1	3	37	4.41	.58	88 *	4.5	3	5	**
Final submission/defense	43	1.99	.11	1.15 **	2.0	2	3	37	4.64	.50	-1.31 **	5.0	3	5	**
Lateness per milestone (weeks)															
Proposal submission/defense	38	2.08	2.60	1.88 **	2.0	0	12	29	7.02	7.32	2.72 **	6.0	0	36	**
Data collection	38	3.59	8.15	5.26 **	2.0	0	50	29	6.59	7.34	2.86 **	6.0	0	36	
Data analysis	38	2.51	2.97	1.42 **	2.0	0	12	29	6.69	7.63	2.50 **	6.0	0	36	**
Final submission/defense	39	2.69	3.00	1.24 **	2.5	0	12	29	7.98	7.57	2.07 **	6.0	0	36	**
% of total degree credits for thesis/diss'n research	44	11.11	5.78	.45	10.0	3	23	29	16.57	7.41	.24	15.0	4	30	**
% completing thesis/diss'n with initial advisor	28	65.64	28.29	42	75.0	10	100	30	73.50	15.71	21	75.0	50	100	
n faculty members required for committee	41	2.85	.36	-2.08 **	3.0	2	3	39	4.03	.87	05	4.0	2	6	**
n restrictions/expectations (see Table 6)															
Thesis/dissertation content	44	4.93	1.50	.51	5.0	2	9	39	5.26	1.45	.24	5.0	2	8	
Thesis/dissertation methods	45	3.89	1.72	.46	4.0	1	9	36	3.86	1.71	.59	4.0	1	8	
Content + methods	44	8.84	2.61	.63	9.0	3	17	36	9.22	2.65	.61	9.0	5	16	
Proposal content	41	6.37	1.95	63	6.0	1	10	36	7.36	1.38	63	7.0	3	10	*

\*t -test comparing masters vs. doctoral programs in psychology departments; #p < .10, \*p < .05, \*\*p < .01, two-tailed.

dissertations. The extended doctoral timeline also affords greater lateness, averaging 3 to 5 weeks longer per milestone. Notable variability within the 2 x 2 cells limits the normative value of central tendencies. Proportionally more credit hours are allocated to dissertation than to thesis work (means = 16.6 and 11.1). Students retain their initial advisors at an overall average rate of around 70%. Table 6 presents frequency norms for assorted substantive and methodological features of theses and dissertations. Of 100 programs, 82 expect the thesis/dissertation topic to be clearly identified within I-O psychology. Literature review is the only universal element (100%), followed by follow through on research as proposed (90% overall; 82% for psychology master's). Testing or developing theory is expected in Table 5

Basic Thesis/Dissertation Features: Master's and Doctoral Programs in Business/Management Departments (Continuous Variables)

				Masters	Programs						Doctoral Pro	grams			
Item/Variable	N resp.	Mean	SD	Skew	Median	Min	Max	N resp.	Mean	SD	Skew	Median	Min	Max	sig.ª
Expected length of main text (n pp.)															
Average	1	-	-	-	-	-	-	8	134.38	52.47	.72	122.5	80	220	•
Minimum	1	-	-	-	-	-	-	5	82.00	40.87	1.52	80.0	50	150	
Maximum	1	-	-	-	-	-	-	5	252.00	157.86	1.14	220.0	120	500	
Ideal year of milestone completion															
Proposal submission/defense	1	-	-	-	-	-	-	11	3.27	.47	1.19	3.0	3	4	
Data collection	1	-	-	-	-	-	-	11	3.68	.56	37	4.0	3	5	•
Data analysis	1	-	-	-	-	-	-	11	4.14	.55	11	4.0	3	5	
Final submission/defense	1	-	-	-	-	-	-	11	4.36	.50	.66	4.0	4	5	
Lateness per milestone (weeks)															
Proposal submission/defense	1	-	-	-	-	-	-	7	3.14	4.49	1.59	1.0	0	12	
Data collection	1	-	-	-	-	-	-	7	3.29	4.50	1.45	1.0	0	12	
Data analysis	1	-	-	-	-	-	-	7	4.29	4.64	.86	4.0	0	12	
Final submission/defense	1	-	-	-	-	-	-	7	5.43	4.54	.06	5.0	0	12	
% of total degree credits for thesis/diss'n research	1	-	-	-	-	-	-	6	34.67	17.91	2.08 *	30.0	20	70	
% completing thesis/diss'n with initial advisor	0	-	-	-	-	-	-	10	53.50	15.82	.37	50.0	30	80	••
n faculty members required for committee	1	-	-	-	-	-	-	11	3.91	.83	.19	4.0	3	5	
n restrictions/expectations (see Table 6)															
Thesis/dissertation content	1	-	-	-	-	-	-	10	5.30	.48	1.04	5.0	5	6	
Thesis/dissertation methods	1	-	-	-	-	-	-	9	4.11	.60	.02	4.0	3	5	
Content + methods	1	-	-	-	-	-	-	9	9.33	.87	.66	9.0	8	11	
Proposal content	1	-	-	-	-	-	-	11	7.18	1.40	39	7.0	5	9	
Excluding non US and online only															_

"t -test comparing psychology vs. business/management doctoral programs; llp < .10, \*p < .05, \*\*p < .01, two-tailed.

around half of all cases. Interestingly, despite I-O psychology's identity as an applied science, only 23% of programs require that theses/dissertations address a practical real -world problem. Students are expected to write the document entirely on their own in 30% of programs.<sup>2</sup> Whether or not the research topic falls within the expertise of the main advisor or committee members more generally is of slightly lesser concern (23% and 28%, respectively).

Business/management doctoral programs are distinct in several ways: They are especially likely to expect a focus on both theory (90% vs. 56% in psychology doctoral) and a practical real-world problem (90% vs. 18%), and to expect the student to write the entire document (60% vs. 26%). Such programs are less likely, however, to expect the dissertation topic to be clearly in I-O psychology (60% vs. 85%, p < .10, twotailed) and to address a topic within committee members' expertise (0% vs. 33%).

Moving down <u>Table 6</u>, norms for methodological features of theses/dissertations

show that data collection and analysis is expected in 90% of programs, and IRB compliance is also very common (94%). Six of the remaining 13 methodological features have base rates below 10% (e.g., cannot be a meta-analysis, cannot rely on archival data, must have an experimental design). Less consistency (i.e., closer to 50% base rate) is evident in whether data can only be collected following the proposal defense (53%), the student has to be directly involved in data collection (57%), data analysis is mostly or completely the student's responsibility (62% and 30% respectively), and a power analysis should precede data collection (30%). Business/ management doctoral programs are more likely to expect students to be directly involved in data collection (89% vs. 42% in psychology doctoral) and yet may be less likely to expect students to conduct their analyses completely on their own (0% vs. 31%; *p* < .10, two-tailed).

Summing the numbers of restrictions/ expectations per program yields norms presented in the bottom section of Tables 3-5. No significant differences emerge between degree types (psychology only) and between department types (doctoral only) on the three sums bearing on thesis/dissertation content and methods. (Proposal content restrictions are discussed below.)

## **Thesis and Dissertation Committees**

Most norms bearing on thesis/ dissertation committees are reported in Table 7. Committees are universal for dissertations and used for theses in 89% of (psychology) master's programs. Regarding the types of members *permitted* to sit on thesis/dissertation committees, universal eligibility is evident for main advisor (100%) and near universality for local I-O faculty (99%) and faculty from other departments at the host institution (98%). PhD-holding practitioners and other nonacademics are allowed by relatively few programs (40% and 24%, respectively), even less so (perhaps) by business/management doctoral pro-

# grams (18% vs. 47% and 0% vs. 21%, respectively; p < .10, two-tailed). As to *required* committee member roles, the main advisor is listed by 94% of programs, followed by other local I-O faculty (81%). At the low end, only three programs (all from psychology doctoral) require faculty from outside the university. Required membership roles are otherwise inconsistent. Non-I-O faculty from the host department are required in 26% of all programs but more frequently in psychology doctoral (49%) than in both psychology master's (12%) and business/management doctoral programs (0%). Psychology doctoral programs, more so than their master's program counterparts, also more frequently require nonadvisor I-O faculty from the same program (92% vs. 72%) and faculty from other departments (54% vs. 17%). Finally, as reported toward the bottom of Tables 3 to 5, committees average around four members for dissertations and around three for theses (psychology only). Variability around those means

#### Table 7

Thesis/Dissertation Committees

	All programs <sup>a</sup> Psychology master's <sup>b</sup> Psychology doctoral <sup>b</sup>		_	Business master's <sup>b</sup>		er's <sup>b</sup>	<sup>b</sup> Business doctoral <sup>b</sup>		toral <sup>b</sup>								
Item/Variable	N resp.	Freq	%	N resp.	Freq	%	N resp.	Freq	%	sig. <sup>c</sup>	N resp.	Freq	%	N resp.	Freq	%	sig.d
Thesis/dissertation directed and/or evaluated by committee	106	99	93.4	47	42	89.4	40	40	100.0	*	2	2		10	10	100.0	
Type of members allowed to sit on thesis/dissertation committee																	
Main faculty advisor	95	95	100.0	40	40	100.0	38	38	100.0		1	-	-	11	11	100.0	
I-O faculty from host department	95	94	98.9	40	40	100.0	38	38	100.0		1	-	-	11	11	100.0	
Non-I-O faculty from host department	95	88	92.6	40	39	97.5	38	36	94.7		1	-	-	11	10	90.9	
Department chair	95	75	78.9	40	33	82.5	38	30	78.9		1	-	-	11	9	81.8	
Faculty from other departments in the host university	95	93	97.9	40	39	97.5	38	38	100.0		1	-	-	11	11	100.0	
Faculty from other universities	95	65	68.4	40	24	60.0	38	29	76.3		1	-	-	11	8	72.7	
Nonfaculty (e.g., practitioners) but with PhD	95	38	40.0	40	17	42.5	38	18	47.4		1	-	-	11	2	18.2	#
Any suitably credentialed expert from outside the dept.	95	23	24.2	40	13	32.5	38	8	21.1		1	-	-	11	0	.0	#
Types of members required to sit on thesis/dissertation committee																	
Main faculty advisor	95	89	93.7	41	37	90.2	37	36	97.3		1	-	-	11	10	90.9	
I-O faculty from host department	95	77	81.1	41	29	70.7	37	34	91.9	*	1	-	-	11	10	90.9	
Non-I-O faculty from host department	95	25	26.3	41	5	12.2	37	18	48.6	**	1	-	-	11	0	.0	**
Faculty from other departments in the host university	95	35	36.8	41	7	17.1	37	20	54.1	**	1	-	-	11	6	54.5	
Faculty from other universities	95	3	3.2	41	0	.0	37	3	8.1	#	1	-	-	11	0	.0	
Nonfaculty (e.g., practitioners) but with PhD	95	0	.0	41	0	.0	37	0	.0		1	-	-	11	0	.0	
Any suitably credentialed expert from outside the dept.	95	1	1.1	41	0	.0	37	1	2.7		1	-	-	11	0	.0	

\*Excluding non-US.

<sup>b</sup>Excluding non-US and online only.

<sup>c</sup>Chi square significance test comparing master's vs. doctoral psychology programs; #p < .10, \*p < .05, \*\*p < .01, two-tailed

Chi square significance test comparing psychology vs. business/management doctoral programs #p < .10, \*p < .05, \*\*p < .01, two-tailed

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appears greater for dissertation committees (range = 2-6) than for thesis committees (range = 2-3).

### **Thesis/Dissertation Proposals**

Table 8 presents norms for nominal descriptors of thesis and dissertation proposals. Corresponding significance test results are reported in Table 2 . Around 79% of programs require a proposal, but the rate is lower in (psychology) master's versus doctoral programs (66% vs. 92%, respectively). In few programs are proposals unavailable (max = 9% of psychology master's). Staple content of proposals includes literature review (97%), identifiable research questions (98%), and expected methods (95%) and analyses (90%). Rates are fairly even across the 2 x 2 breakouts, except analyses are less often a focus in thesis than in dissertation proposals (psychology). Copies of measures are expected in 72% of programs, with a plausibly higher rate in psychology doctoral (83%) over master's proposals (66%; p < .10, two-tailed). Expected implications are (themselves) expected in 44% of programs but more so in doctoral (61%) over master's programs (27%). Most programs (87%) require a proposal defense, and nearly half open proposal defenses to the public; the rate reaches 89% in business/ management doctoral programs and falls to 34% in psychology doctoral programs. Business/management doctoral programs are further distinguished by

higher rates of expecting detailed timelines for dissertation completion (46% vs. 8% in psychology).

Norms for sums of proposal content restrictions/expectations are shown at the bottom of Tables 3–5. Only one significant difference is evident: Psychology doctoral programs average 7.4 restrictions in proposal content versus an average of 6.4 in psychology master's programs, suggesting greater stringency in proposal content at the doctoral over the master's level.

The bulk of continuous variable norms for thesis/dissertation proposals are provided in Table 9 for all programs combined and in Tables 10 and 11 for the 2 x 2 breakouts. The typical thesis proposal averages about 24 pages in length compared to around 60 for dissertation proposals. Proposal presentations for both degrees average about a half hour in psychology and a full hour in business/management departments. Entire proposal defenses average longer for psychology dissertations (mean = 1:42) than for theses (1:12), but longest for business/management dissertations (2:06). Proposal defense formality averages just below "moderate," with notable variability across programs. Most students (70%) pass the proposal defense with (up to) minor revisions, and an additional 25% pass with heftier changes. Passing a dissertation proposal defense with only minor revisions is more common in business/management (79%) than in psychology (59%). Relatively few students (.8% overall) are required to submit a new proposal; no proposal is bad enough to have the student expelled.

# Thesis/Dissertation Final Defenses and Success Rates

Table 12 displays nominal variable norms for thesis/dissertation final defenses. Most programs (90%) require students to formally defend their thesis/dissertation, at least part of which, typically (85%), is open to the public. Relatively few programs (15%) require a separate public defense. All psychology doctoral programs require a dissertation defense (100%); thesis defenses (in psychology departments) are less common (85%).

Continuous variable norms for thesis/ dissertation final defenses and success rates for all (US) programs combined are offered in Table 13. Tables 14 and 15 provide corresponding norms for the 2 x 2 breakouts. Student presentations during the final defense average 34 minutes, all told, but are longer for business/management dissertations (mean = 1:07) than for psychology dissertations (0:31). Total defenses average 1:41. Psychology thesis defenses are the shortest (mean = 1:25), followed by psychology dissertation defenses (mean = 1:52) and then business/management dissertation defenses (mean = 2:11). Across programs, final defenses tend to be moderately formalized (mean rating = 3.1). Psychology thesis defenses, however,

are a little less so (2.9) than psychology dissertation defenses (3.2).

Moving down Table 13, we see that 75% of students, overall, earn a solid pass with (up to) minor revisions. Pass rates at that level may be lower for psychology theses than for psychology dissertations (73% vs. 84%, p < .10, two-tailed). Another 21% of students pass with moderate revisions. Students are rarely expected to gather new data (0.2%) and no defenses are so weak as to prompt expulsion.

## **Other Performance Expectations**

Table 16 presents frequency norms for expectations regarding student involvement in research and consulting projects. Corresponding chi square results are reported in Table 2. The overall modal involvement is four to five research projects (28% of programs) and two to three consulting projects (41%) over the course of students' tenure. Understandably, given their shorter program timeline, master's students (combining department types) are expected to assist with fewer research projects than their doctoral counterparts (mode = 1 vs. 4–5). Rates for research projects are more balanced between department types (mode = 4–5 in each case). Consulting project expectations show the opposite pattern, varying nonsignificantly between degree types (mode = 2-3 in each case) but significantly between department types (mode = 2-3 for psychol-

#### Table 13

Thesis/Dissertation Final Defenses and Success Rates: All Programs (Continuous Variables)

Item/Variable	N resp.	Mean	SD	Skew	Median	Min	Max
Final defense features							
Length of final defense presentation (hrs.)	78	.56	.37	2.22 **	.5	0	2
Length of public thesis/diss'n presentation (hrs.)	14	1.06	.66	.67	.9	0	2
Length of final defense (hrs.)	89	1.69	.46	18	2.0	1	3
Final defense formalization/structure <sup>a</sup>	91	3.05	.75	41	3.0	1	4
% of students' final thesis/diss'n success (past 5 yrs.)							
Solid pass: minor revisions at most	46	74.61	24.78	-1.38 **	80.0	0	100
Solid pass: moderate data revisions/re-analysis	46	21.13	21.84	1.79 **	20.0	0	100
Conditional pass: extensive re-analysis	46	4.11	6.13	2.17 **	.0	0	30
Conditional pass: new data required	46	.15	.79	5.70 **	.0	0	5
Failure: expulsion from program	46	.00	.00	.00	.0	0	0

Excluding non-US. #p < .1, \*p < .05, \*\*p < .01, two-tailed

<sup>a</sup>1 = Loosely formalized/structured, 2 = Somewhat formalized/structured, 3 = Moderately formalized/structured, 4 = Very highly formalized/structured

#### Table 14

Thesis/Dissertation Final Defenses and Success Rates: Master's and Doctoral Programs in Psychology Departments (Continuous Variables)

			1	Master's prog	grams					1	Doctoral proj	grams			
Item/variable	N resp.	Mean	SD	Skew	Median	Min	Max	N resp.	Mean	SD	Skew	Median	Min	Max	sig.ª
Final defense features															
Length of final defense presentation (hrs.)	32	.46	.19	1.50 **	.4	0	1	34	.52	.28	1.55 **	.5	0	2	
Length of public thesis/diss'n presentation (hrs.)	8	.96	.70	.90	.8	0	2	6	1.19	.64	.84	.9	1	2	
Length of final defense (hrs.)	37	1.41	.40	.28	1.5	1	2	38	1.86	.35	-1.08 **	2.0	1	3	••
Final defense formalization/structure <sup>b</sup>	39	2.87	.86	26	3.0	1	4	38	3.21	.58	02	3.0	2	4	•
% of students' final thesis/diss'n success (past 5 yrs.)															
Solid pass: minor revisions at most	36	73.25	26.16	-1.26 **	80.0	0	100	8	83.75	8.76	.93	80.0	75	100	#
Solid pass: moderate data revisions/re-analysis	36	22.14	23.23	1.70 **	20.0	0	100	8	13.75	6.94	-1.12	15.0	0	20	
Conditional pass: extensive re-analysis	36	4.61	6.57	2.08 **	.5	0	30	8	1.63	3.11	1.72 *	.0	0	8	
Conditional pass: new data required	36	.00	.00	.00	.0	0	0	8	.88	1.81	2.18 *	.0	0	5	
Failure: expulsion from program	36	.00	.00	.00	.0	0	0	8	.00	.00	.00	.0	0	0	
Excluding non US and on line only															

"t -test comparing master's vs. doctoral programs in psychology departments; #p < .10, \*p < .05, \*\*p < .01, two-tailed.

<sup>b</sup>1 = Loosely formalized/structured, 2 = Somewhat formalized/structured, 3 = Moderately formalized/structured, 4 = Very highly formalized/structured

#### Table 15

Thesis/Dissertation Final Defenses and Success Rates: Master's and Doctoral Programs in Business/Management Departments (Continuous Variables)

				Master's p	programs						Doctoral pro	grams			
Item/variable	N resp.	Mean	SD	Skew	Median	Min	Max	N resp.	Mean	SD	Skew	Median	Min	Max	sig.ª
Final defense features															
Length of final defense presentation (hrs.)	1	-	-	-	-	-	-	9	1.12	.66	.23	1.0	0	2	*
Length of public thesis/diss'n presentation (hrs.)	0	-	-	-	-	-	-	0	-	-	-	-	-	-	
Length of final defense (hrs.)	1	-	-	-	-	-	-	9	2.19	.35	1.93 *	2.0	2	3	•
Final defense formalization/structure <sup>b</sup>	1	-	-	-	-	-	-	9	3.33	.71	61	3.0	2	4	
% of students' final thesis/diss'n success (past 5 yrs.)		-	-	-	-	-	-								
Solid pass: minor revisions at most	1	-	-	-	-	-	-	0	-	-	-	-	-	-	
Solid pass: moderate data revisions/re-analysis	1	-	-	-	-	-	-	0	-	-	-	-	-	-	
Conditional pass: extensive re-analysis	1	-	-	-	-	-	-	0	-	-	-	-	-	-	
Conditional pass: new data required	1	-	-	-	-	-	-	0	-	-	-	-	-	-	
Failure: expulsion from program	1	-	-	-	-	-	-	0	-	-	-	-	-	-	
Production and 10 <sup>6</sup> and colling only															

\*t-test comparing psychology vs. business/management doctoral programs; #p < .10, \*p < .05, \*\*p < .01, two-tailed.</p>

<sup>b</sup>1 = Loosely formalized/structured, 2 = Somewhat formalized/structured, 3 = Moderately formalized/structured, 4 = Very highly formalized/structured

ogy vs. 0 for business/management). A significant degree-by-department interaction for consulting project involvement suggests a larger difference between degree types in business/management departments (mode = 1 for master's vs. 0 for doctoral) than in psychology departments (mode = 2–3 for both degree types).<sup>3</sup> Continuous variable norms for academic performance and program participation expectations are offered in <u>Table 17</u>. Corresponding norms for the 2 x 2 breakouts are provided in <u>Tables 18</u> and <u>19</u>, and ANOVA results in <u>Table 20</u>. Averaging across programs, students are expected to maintain a GPA of around 3 and assist 2.6 faculty members over the course of the degree. GPA standards may be slightly higher in doctoral than in master's programs (mean = 3.07 vs. 2.99; p < .10, two-tailed).<sup>4</sup> Doctoral students are expected to work with more faculty members (mean = 3.0) than are master's students (mean = 2.2).

Across programs, IRB training is the strongest research expectation, followed by independent research and lab participation. Regarding conference attendance, SIOP is the most strongly expected overall, followed by Academy of Management. Program orientation is the strongest seminar attendance expectation, followed by graduate school and general university orientations. Class or course instruction is the strongest miscellaneous performance expectation, followed by gree types are evident for peer-reviewed publications (mean = 2.9 vs. 1.4), brownbag attendance (3.3 vs. 1.7), and independent research (3.0 vs. 1.9). Several department effects are also evident: Psychology departments show higher means on research lab participation (2.5 vs. 1.7), SIOP attendance (2.5 vs. 1.8), and, possibly, service involvement (1.9 vs. 1.3; p < .10, two-tailed), and a weaker mean on Academy of Management conference attendance (1.2 vs. 2.7). A modest two-way interaction (p < .10, two-tailed) suggests that, whereas instruction (by students) is strongly expected in business/ management doctoral programs (3.8) and only weakly expected in corresponding master's programs (1.5), the difference between degree types in psychology is muted (2.9 vs. 2.3, respectively).

"brown bag" attendance and program/ department service.

Table 20 shows a large proportion of significant effects on participation expectations by degree type, with expectations stronger for doctoral students in all (significant) cases. Summarizing these effects, Figure 1 shows means for the four 2 x 2 subgroups. The largest differences between de-



**Student Participation Expectations** 



## Top 10s

Available *Ns* for the top-10s are modest (range = 5 to 8), limiting power to detect significantly distinctive features. The rates of significant effects (p < .10, two-tailed) are as follows for the 60 nominal variables: Gibby et al. = 18%, KA-PhD = 7%, KA -MA = 2%. Corresponding observed significance rates for the 50 continuous variables are 13%, 8%, and 6%. We summarize significant effects notwithstanding the nominal Type I error rates as they offer plausibly interpretable patterns.<sup>5</sup>

The Gibby et al. top-10 programs (Ns = 6– 8) are less likely to expect the dissertation topic to fall within the main advisor's expertise (0% vs. 29% of 30-32 remaining psychology doctoral programs), data collection to only follow the proposal (17% vs. 57%), inclusion of at least two independent variables (0% vs. 33%), and a power analysis before data collection (0% vs. 47%). For proposals, the Gibby et al. set further shows lower likelihood of expecting descriptions of methods, analyses (83% vs. 100% in each case), and threats to validity (0% vs. 43%). The Gibby et al. top-10 programs also have less formalized final defenses (mean = 2.86 vs. 3.29) but higher numbers of dissertation committee members (4.6 vs. 3.9 for peer programs), longer proposal defenses (mean = 1:54 vs. 1:40), and stronger expectations of SIOP conference attendance (3.1 vs. 2.9), service (2.9 vs. 2.1), and IRB training (4.0 vs. 3.6).

All told, the Gibby et al. top-10 (psychology doctoral) programs appear more flexible and less formal than peer programs when it comes to running dissertations. The average number of content restrictions is 4.9 for the Gibby et al. top-10 versus 5.4 for peer programs (ns), but the gap is wider for numbers of methodological expectations (2.2 vs. 4.2; p < .01, two-tailed) and the number of expectations regarding proposal content (6.2 vs. 7.6; p < .05). This should not be taken to suggest less rigor (e.g., committees are larger, proposal defenses are longer). Indeed, greater flexibility could promote research creativity and productivity.

The Kraiger and Abalos top-10 doctoral programs (Ns = 3-5) are statistically distinguished on the following variables: The dissertation topic is less likely to be expected to fall within committee members' expertise (0% vs. 38% of peer programs), the department chair is less likely to be eligible to serve on dissertation committees (40% vs. 85%), and the proposal is less likely to cover threats to validity (0% vs. 42%). Proposal defenses tend to be later (mean = 4.3 years in vs. 3.6 years in) and more formalized (3.0 vs. 2.8), and yet final defenses are less formalized (3.0 vs. 3.3). The overall pattern suggests greater flexibility in the K&A top-10 doctoral programs, similar to that evident in the Gibby et al. top-10 but less pronounced.

Few significant markers of the KA–MA top -10 programs (*N*s = 5–8) emerged to distinguish them from other psychology master's programs. There is a lower likelihood for expecting analyses to be completed primarily by the student (17% vs. 72% of peer programs), a slightly longer timeline for data collection (mean = 2.0-year mark vs. 1.8-year mark) and a higher rate of students passing with (up to) minor revisions (mean = 91% vs. 66%). Overall, the pattern of differences may suggest greater leniency in the KA–MA programs, but low power precludes firm conclusions on this.

## **General Discussion**

As reported in previous installments (with respect to other parts of the dataset), there are relatively few variables whose central tendency can be taken as normative in describing the population as a whole. Variability across programs is a recurring theme in the benchmarking study. Some of that variability is explained by degree type (master's vs. doctoral), department type (psychology vs. business/management), and their interaction, but considerable variability remains within each of the 2 x 2 subsets. supporting a norm of program uniqueness regarding, in this case, theses/ dissertations and their management.

Notwithstanding the noted program specificity, differences are evident at the aggregate level between degree and department types. The most obvious difference is that doctoral dissertations are longer, bigger, and more formalized than master's theses, reflecting stronger emphasis on research in doctoral-level training. This theme is further evident in comparisons on research-related expectations (e.g., involvement in peer-reviewed publications) and conference attendance. A corresponding distinction between degree types is evident regarding research rigor in some respects, including committee size and required membership (e.g., faculty from other local departments), and proposal content (e.g., literature review, proposed analyses, implications for practice). These differences are not surprising, but the data offer greater precision in comparing master's and doctoral education in I-O/OB than that afforded anecdotally.

Department effects are more complex. OB dissertations, more so than I-O dissertations, are expected to be theoretically focused and target practical real-world problems, but the nature of the theory and problems are less likely to be directly relevant to I-O psychology. OB dissertations tend to be longer than psychology dissertations, and proposal and final defenses and presentations are also longer; research milestones (especially data collection) tend to be reached sooner, and OB students are more likely to be involved in data collection and write the document in its entirety. On the other hand, OB doctoral students are less likely than psychology doctoral students to be expected to specify testable hypotheses in their proposals, to run all their own analyses, and to have committee members with topic-specific expertise. They are also less strongly encouraged to partici-

pate in a research lab and more likely to pass with only minor revisions. In addition, despite the noted emphasis on practicerelevant theory, doctoral committees in business schools are less likely to include practitioners. Perhaps reflecting a more business-like approach to research, management departments are more likely to reguire a detailed timeline at the proposal phase and have presentations open to the public, and they are less likely to expect students to serve the program. Finally, there is a clear (and understandable) preference for business/management students to attend the annual AoM conference and for psychology students to attend the SIOP conference.

Current data offer little explanation of observed departmental effects. Considering current findings in light of those observed in other parts of the survey (e.g., curriculum) may clarify those effects. Such broad-stroke comparisons are a focus of the final installment of the survey report planned for summer. Until then, norms presented here offer individual programs the chance to see how their master's' theses and/or doctoral dissertations compare to those in peer programs, offering possible direction for local development of an important aspect of graduate education in I-O/OB.

[All of the tables, the figure, and a pdf copy of the article can be downloaded in a single .zip file here, for those who prefer to read offline: http://www.siop.org/tip/tett.zip]

<sup>1</sup>The survey's descriptive focus reduces emphasis on generalizability of observed differences between program types. Nonetheless, as in earlier installments, we report twotailed significance at the nominal p < .05 and p < .01 cutpoints and also at p < .10, in light of possible predictability affording a onetailed test at p < .05. As with interpreting any significance test, we urge caution here. <sup>2</sup> We did not ask what input others might have (e.g., proofing by advisors or peers, adding sentences or paragraphs). It seems doubtful that the student would be responsible for less than the large majority of the writing, but how much and in what ways are matters for future surveys.

<sup>3</sup> Low Ns in the business/management master's group (3–4) demand cautious interpretations here.

<sup>4</sup> These and other values reported below are *n*-weighted means.

<sup>5</sup> As noted earlier, generalizability is a muted concern in this descriptive, normative undertaking. It is especially muted here, as the entire population of a given top-10 has (of course) N = 10. The noted cases in this light may be taken as simply the most reliably distinctive features observed.

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